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Effects of severe exercise under acute sleep deprivation on stress hormone responsesMasayuki Konishi ¹⁾, Shizuo Sakamoto ²⁾¹⁾ Graduate School of Sport Sciences, Waseda University, Japan²⁾ Faculty of Sport Sciences, Waseda University, Japan

The purpose of this study was to investigate the effects of severe exercise under sleep deprivation on stress hormone responses. Eight healthy men were recruited in this study (mean age 21.5 ys). Four conditions of sleep state were defined as follows: 1) normal sleep condition: a state after having a sleep from 11:00 p.m. to 5:30 a.m.; 2) 2 h-nap condition: a state of a 2 h-nap from 5:30 a.m. to 7:30 a.m. after acute sleep deprivation; 3) 20 min-nap condition: a state of a 20 min-nap from 5:30 a.m. to 5:50 a.m. after acute sleep deprivation; 4) sleep deprivation condition: a state of acute sleep deprivation without a nap. Exercise test was performed until exhaustion by ramp protocol for treadmill at each condition. Blood samples were drawn immediately after peak exercise, and plasma adrenaline,

noradrenaline and adrenocorticotrophic hormone (ACTH) were obtained. Plasma adrenaline was strongly correlated with plasma ACTH in the normal sleep and 20 min-nap condition ($r=0.913$, $P<0.01$ and $r=0.811$, $P<0.05$, respectively). Moreover, plasma adrenaline was strongly correlated with plasma noradrenaline in the 2 h-nap, 20 min-nap and sleep deprivation condition ($r=0.972$, $P<0.001$, $r=0.885$, $P<0.01$ and $r=0.949$, $P<0.001$, respectively). The present study indicated a close association between adrenomedullary and sympathetic noradrenergic responses to exercise under sleep deprivation. In conclusion, these results suggested that sleep deprivation altered stress hormone responses to severe exercise.

Predicting body surface area of Japanese children from body height and massKayo Shitara ¹⁾, Yasuo Kawakami ²⁾¹⁾ Graduate School of Sport Sciences, Waseda University, Japan²⁾ Faculty of Sport Sciences, Waseda University, Japan

INTRODUCTION: Body surface area (BSA) is an important parameter in physiology and clinical medicine. Several researchers have suggested various equations for predicting BSA using body height and

mass, but no equation has been determined specifically for Japanese children. The purpose of this study was to newly develop equations for predicting BSA of Japanese children. **METHODS:** BSA was determined

for 57 boys (7~13yr) and 45 girls (7~12yr) using a recently developed 3D photonic image scanning technique. Prediction equations for BSA was developed using body height (H) and mass (M) as independent variables for both sexes. RESULTS: The BSA prediction equations developed were: $BSA (cm^2) = 95.234 \times H^{0.666} \times M^{0.428}$ for boys and $BSA (cm^2) = 127.964 \times H^{0.614} \times M^{0.419}$ for girls. The coefficient of determination and standard error of estimation for these equations were, respectively, 0.996 and 140cm² (1.2%)

for boys and 0.993 and 141cm² (1.2%) for girls. There was no significant difference between the predicted and measured BSA values and no systematic patterns were found to be involved in the residuals for either gender. On the other hand, all existing equations to date failed to predict BSA of children. CONCLUSIONS: BSA of Japanese children is predictable from body height and mass with high accuracy. Present gender-specific equations developed in this study should be used for predicting BSA of Japanese children.

The Taiwan "Chiayi Agriculture and Forestry School" 's baseball team organized with three ethnic groups under Japanese colonial rule

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Purpose: In this research racial issues of the Chiayi Agriculture and Forestry School baseball team, which was uniquely organized with Japanese, Chinese, and Taiwan Aborigines in the days of Japanese colonial rule was discussed. Conclusion: The Chiayi Agriculture and Forestry School was established in 1919. Four years later, Edict N.20 「Taiwan's education reform bill」 allowed Japanese students to enter in this school, so that three ethnic groups could study together. Managers of the baseball team, Mr. Ando and Mr. Kondo, appeared to have no racism in their team management and

baseball coaching. The team first participated in the 17th All Japan Middle School Baseball Tournament in Koshien, Japan in 1931 and earned the second prize. This could be recognized as an outcome of the attitude of fair play. But the newspaper reports had two perspectives. First, the players were considered as a well-integrated team with special talents, such as “foot runner” and “excellent pitcher”. The other perspectives referred to the players as uneducated savages. Such opinions took no thought of the idea of the team, as a melting pot of three ethnic groups.

The women gymnastics teacher as a vocation: The case of Tokyo Women's School of Gymnastics and music in the latter Meiji period

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The purpose of this paper is to consider about the meaning of the gymnastics teacher as a vocation. It is

generally agreed that the social status of the women gymnastics teacher was lower than the other working woman during the prewar period. On the contrary, it is clear that the women gymnastics teacher had highly school background. The two facts are mutually incompatible. The question now arises: is it true that the social status of the women gymnastics teacher for secondary school was lower than the other woman? In this paper I weighed the historical record about the alumnae of the women's school of gymnastics and music with the Higher Educational institutions in the latter meiji period. The result of the examination was that the percentage of a family with samurai antecedents (Shizoku) in alumnae of Tokyo women's school of

gymnastics and music is 0.21%-0.54%. That figures are same level that the universities one around 1900. These figures prove clearly that a lot of women gymnastics teacher had higher family background. The character of women gymnastics teacher has been molded by three reasons. The first is the existence of the unlicensed women gymnastics teacher at elementary school; the second is the low evaluation of the men gymnastics teacher; the third is the unfavorable view about women's physical activity and exercise. These results lead to the conclusion that the social status of the women gymnastics teacher was not necessarily lower than the other women.

A study about the suicide of Koukichi Tsuburaya, a marathon runner: Related to the issue about contemporary competitive sport

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The purpose of this study was to clarify a contemporary meaning of discourse concerning the suicide of Koukichi Tsuburaya who is a marathon runner in Olympics games Tokyo, 1964. It was clarified to the death of Tsuburaya that it kept being talked by a specific context in the newspaper and the magazine, and "Discourse related the suicide of Tsuburaya" was reproduced. It was pointed out that the organization such as nation and the Self Defense Forces had become "Pressure" for Tsuburaya. An active athlete in the world including the Olympics is talked about in the situation in which "Pressure" is shouldered as well as Tsuburaya in recent years. However, the difference with the

generation of Tsuburaya was clearly shown, and the conversion of "sports ethos" was pointed out. Result of consideration, the meaning of the death of Tsuburaya in sport was shown as follows: 1) By the death of Tsuburaya, the athlete can be said to not only the same athlete but also the general public that it will be recognized by it undertaking an excessive expectation and social pressures. 2) It can be thought that the death of Tsuburaya prepared a normal discourse that makes recognition of becoming athlete's representation from nation "Japan" and comparison to "sport ethos" related Tsuburaya.

Acculturation of Balinese dance technique

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In this research, the body is featured as a cultural study. This aims to clear up the situation of the body specified in culture, and sets to offer the result as fundamental share recognition of the program of maintenance and management of physical strength and health. As the case study, this research focuses on the posture “canket” of the female dance of Bali Island, Indonesia, and the present condition of one certain village, Peliatan is considered. Peliatan is widely known as “a village of art” in Bali Island. The basic posture of

the present female dance, “canket” is also said to originate in Peliatan. This posture is not what was in throughout Bali for many years. It spread all over Bali in the 1930s. However, canket is crumbling gradually now in Peliatan. There is the influence of the plan advanced to avoid the crisis of the shortage of successors of the present village. While protecting the pride that it is a village of art, and its culture, the original form is changed. That is, their traditional original view of body is collapsing.